

青海黄芪属新分类群

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New Taxa of the Genus *Astragalus* from Qinghai

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关键词 黄芪属, 新分类群

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大板山黄芪 新种 图 1

Astragalus dabanshanicus Y. H. Wu, sp. nov. fig. 1

Species nova affinis *A. petersi* Tsai et Yu, sed stipulis trianguli-lanceolatis 2~3 mm longis; foliolis super glabris; bracteis c. 1.5 mm longis; calycibus c. 2.5 mm longis; vexillo 6.5~7 mm longo, alis c. 5 mm longis, 1.5 mm latis, unguibus tantum 1.8 mm longis, carinis c. 4 mm longis, unguibus tantum 1.8 mm longis differt.

Herba perennis. Caules erecti 40~50 cm alti, pubescentes albi et nigrescentes sparse obsiti vel subglabri. Folia 5~8 cm longa, infra petioli 1~2 cm longis, cum rachae pubescentibus albis et nigrantibus sparse obsitis, supra petioli subnullis; stipulis liberis, trianguli-lanceolatis, 2~3 mm longis, glabris; foliolis 4~6-jugis, oblongis vel oblongi-ovatis, 5~18 mm longis, 3~6 mm latis, apice obtusa, basi latiuscula vel subrotundata, petioli brevibus, super glabris, subtus brevepilis albis sparse adpressis vestitis. Inflorescentiae dense racemisae; multiflorae; axillares pedunculis, 6~8 cm longis; brevepilis nigrantibus sparse obsitis; bracteis albis, membranaceis, subulatis, c. 1.5 mm longis, extus pilis nigris obsitis; bracteolis nullis; calycibus campanulatis, cum dentibus c. 2.5 mm longis; extus brevepilis nigris sparse obsitis, dentibus subulatis, c. 1 mm longis; corollae purpureae; vexillis obovatis 6.5~7 mm longis, c. 4 mm latis; apice emarginatis, basi sensim angustatis ad ungues; alis oblongis c. 5 mm longis, c. 1.5 mm latis, unguibus tantum 1.8 mm longis; carinis c. 4 mm longis, limbis obovatis, unguibus tantum 1.8 mm longis; ovario glabro, breviter stipitato. Legumen ignotum.

Qinghai(青海): Datong Xian(大通县), Baoku(宝库), alt. 3 280 m. 9 Aug. 1989, Zhang Zhihe(张志和) 4409 (Typus, HNWP 中国科学院西北高原生物研究所植物标本馆)。

多年生草本, 高 40~50 cm; 茎直立、散生黑色和白色短柔毛或有时近无毛。羽状复叶长 5~8 cm, 下部的叶柄长 1~2 cm, 连同叶轴被黑色和白色短柔毛, 上部的叶几无柄; 托叶离生, 三角状披针形, 长 2~3 mm, 无毛; 小叶 9~13 枚, 长圆形或长圆状卵形, 长 5~18 mm, 宽 3~6 mm, 先端钝圆, 基部宽

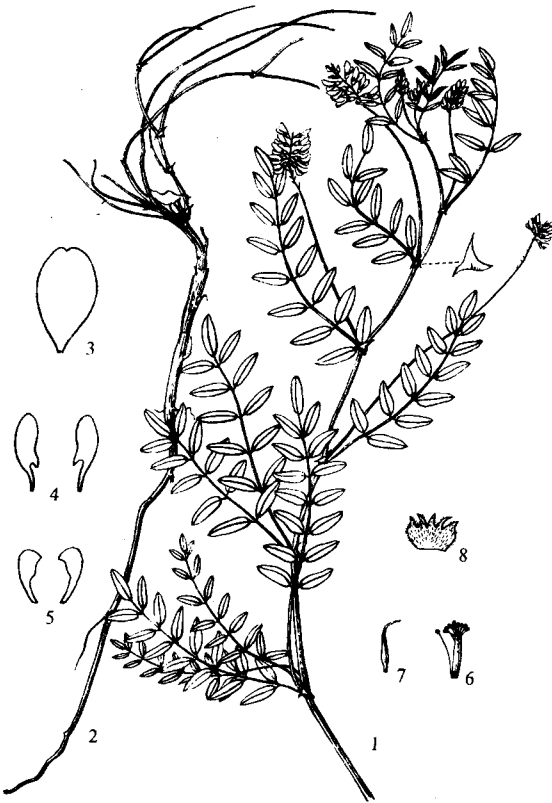


图1 大板山黄芪 1. 植株上部; 2. 植株下部; 3. 旗瓣; 4. 翼瓣; 5. 龙骨瓣; 6. 雄蕊; 7. 子房; 8. 花萼。(王颖绘)

Fig. 1 *Astragalus dabanshanicus* Y. H. Wu 1. up part of the plant; 2. down part of the plant; 3. standard; 4. wing; 5. keel; 6. stamen; 7. ovary; 8. calyx

楔形或近圆形, 具短柄, 上面无毛, 下面散生白色贴伏短柔毛。总状花序密生多花, 腋生, 总花梗长 6~8 cm, 散生黑色短柔毛; 苞片白色膜质、钻状, 长约 1.5 mm, 外面被黑毛。小苞片无; 花萼钟状, 长约 2.5 mm, 疏被黑色短柔毛, 萼齿长约 1 mm; 花冠蓝紫色; 旗瓣倒卵形, 长 5.6~7 mm, 宽约 4 mm, 顶端微凹, 基部渐狭成柄; 翼瓣长圆形, 长约 5 mm, 宽约 1.5 mm, 瓣柄长约 1.8 mm; 龙骨瓣长约 4 mm, 瓣片半倒卵形, 瓣柄长约 1.8 mm; 子房无毛, 具短柄。荚果未见。花期 7~8 月。

本种同线苞黄芪 *A. peterae* Tsai et Yu 相近, 但托叶三角状披针形, 长仅 2~3 mm, 小叶上面无毛, 苞片长仅 1.5 mm, 花萼长约 2.5 mm, 旗瓣长 6.5 mm, 翼瓣长约 5 mm, 宽约 1.5 mm, 瓣柄长 1.8 mm, 龙骨瓣长约 4 mm, 瓣柄长仅 1.8 mm 可以区别。

西倾山黄芪 新种 图 2

Astragalus xiqingshanicus Y. H. Wu, sp. nov. fig. 2

Species nova affinis *A. chinensi* Linn. f., sed caule basi ramoso, diffuso 15~30 cm longo; bracteis 6~12 mm longis, bracteolis nullis; vexillis obovati-lanceolatis, unguibus limbis subaequilongis, alis vexillis subaequilongis, unguibus alarumque carinarum c. 8 mm longis differt.

Species nova affinis *A. lucido* Tsai et Yu, sed caule diffuso, basi calycis tubo ebracteolo, ungue alae et carinae limbo duplo longiore; leguminibus 12~22 mm longis differt.

Herba perennis. Radix crassa; caulibus basi ramosis, diffusis, 15~30 cm longis, glabris. Folia 3~12 cm longa, petiolis vix 1~2 cm longis; stipulatis liberis, basium petiolo connatis, lati-lanceolatis vel ovati-lanceolatis, 6~12 mm longis, 2~5 mm latis, apice acutis, subglabris; foliolis 6~14-jugis, oblongis vel ovati-oblongis, 3~13 mm longis, 2~7 mm latis, apice obtusis, mucronatis, basi subrotundatis, supraglabris, subtus vix margine et nervus medius paulo pilosis. Inflorescentiae 3~9-florae racemosa; pedunculo foliis manifeste brevior, 1~4 cm longo; bracteis lati-lanceolatis vel ovati-lanceolatis, 6~12 mm longis, 2~5 mm latis; pedicellis pilis nigris sparse obsitis, c. 2~3 mm longis; calycibus tubi-campanulatis, denique denigratus cum dentibus c. 6~10 mm longis, extus glabris, dentibus trianguli-lanceolatis, 2~4 mm longis, interius pilosis; bracteolis nullis; corolla flava, vexillis obovati-lanceolatis, 11~13 mm longis, c. 7 mm latis, apice obtusis vel truncatis, basi sensim angustatis, unguibus limbis subaequilongis; alis oblongis, 11~12 mm longis, c. 2 mm latis, unguibus c. 8 mm longis; carinis 11~13 mm longis, unguibus c. 8 mm longis; ovario glabro, longi-stipitato. Legumen oblongum, brunneum vel post demum nigrum, 12~22 mm

longum, 6~12 mm latum, crassum, durum, inflatum, glabrum, seminibus rotundati-reniformibus c.2 mm longis, brunneis.

Qinghai(青海): Henan Xian(河南县), Damitang(达米塘), alt. 3 600 m., 6 Sept. 1990, Wu Yuhu(吴玉虎) 7571(Typus, HNWP); Menyuan Xian(门源县), Qingshizui(青石嘴), alt. 3 700 m., 27 Aug. 1975, Guo Benzao(郭本兆)12234.



图2 西倾山黄芪 1. 植株; 2. 花萼; 3. 旗瓣; 4. 翼瓣; 5. 龙骨瓣; 6. 雄蕊; 7. 雌蕊; 8. 果实; 9. 种子。(王颖绘)

Fig. 1 *Astragalus xiqingshanicus* Y. H. Wu 1. plant; 2. calyx; 3. standard; 4. wing; 5. keel; 6. stamen; 7. pistil; 8. fruit; 9. seed

翼瓣与龙骨瓣的瓣柄均长约 8 mm, 可以区别。

本种同光亮黄芪 *A. lucidus* Tsai et Yu 相近, 但本种的茎铺散, 萼筒基部无小苞片, 翼瓣和龙骨瓣的柄均为瓣片的 2 倍长, 荚果长达 22 mm, 可以区别。

乐都黄芪 新变种 图 3

Astragalus lepsensis Bunge var. *leduensis* Y. H. Wu, var. nov. fig. 3

A typo varietatis recedit stipulis filiformi-lanceolatis, 4~8 mm longis, foliolis utrinque sparse albi-pilosis; pedunculatis axillaribus, folio manifeste longiore, bracteatis 4~7 mm longis; calyce 6~8 mm longo; vexillis 16~17 mm longis, 9~10 mm latis, alis vexillo aequilongis differt.

多年生草本。主根粗壮。茎自基部分枝, 铺散, 长 15~30 cm, 无毛。羽状复叶长 3~12 cm, 叶柄长仅 1~2 cm; 托叶离生, 基部与叶柄稍贴生, 宽披针形或卵状披针形, 长 6~12 mm, 宽 2~5 mm, 先端渐尖, 近无毛; 小叶 13~29 枚, 长圆形至卵状长圆形, 长 3~13 mm, 宽 2~7 mm, 先端钝圆, 具小尖头, 基部近圆形, 上面无毛, 下面仅沿中脉和边缘稍被柔毛。总花序生 3~9 花; 总花梗明显短于叶, 长 1~4 cm; 苞片宽披针形或卵状披针形, 长 6~12 mm, 宽 2~5 mm; 花梗长 2~3 mm, 稀被黑柔毛; 花萼管状钟形, 后期变黑色, 长 6~10 mm, 外面无毛, 萼齿三角状披针形, 长 2~4 mm, 齿内被柔毛; 小苞片缺; 花冠黄色; 旗瓣倒卵状披针形, 长 11~13 mm, 宽约 7 mm, 瓣片近圆形, 先端钝圆或平截, 基部渐狭成柄, 柄与瓣片近等长; 翼瓣长圆形, 长 11~12 mm, 宽约 2 mm, 细柄长约 8 mm; 龙骨瓣长 11~13 mm, 细柄长约 8 mm; 子房无毛, 具长柄。荚果长圆形, 棕色, 后期带黑色, 长 12~22 mm, 宽 6~12 mm, 厚硬, 膨胀, 无毛, 有横纹, 果梗长 6~10 mm; 种子圆肾形, 径约 2 mm, 褐色。花期 6~8 月, 果期 7~9 月。

本种同华黄芪 *A. chinensis* Linn. f. 相近, 但茎铺散, 基部分枝, 长 15~30 cm, 苞片长 6~12 mm, 无小苞片, 旗瓣倒卵状披针形, 瓣柄与瓣片近等长, 翼瓣与旗瓣近等长,

Affinis *A. luteolo* Tsai et Yu, sed foliis oblongis, vexillo 16~17 mm longo, 9~10 mm lato, alis et carina vexillis subaequilongis, unguiculatis c. 10~11 mm longis differt.

Herba perennis. Radix crassa; caule erecto 50~80 cm alto, albi-piloso desperse. Folia 6~10 cm longa, petiolatis 8~13 mm longis; stipulatis liberis, filiformi-lanceolatis, 4~8 mm longis, c. 1 mm latis, subtus sparse pilosis; foliolis 5~8-jugatis, oblongis, 20~32 mm longis, 2~5 mm latis, apice obtusis, basi subrotundatis vel lati-cuneatis; petiolulis brevibus, utrinque sparse albi-pilosis; Inflorescentiae, racemosae multiflorae, axillares; pedunculis foliis manifeste longioribus, sparse pilosis; bracteis filiformibus, 4~7 mm longis; bracteolis nullis, pedicellis 2~5 mm longis, dense nigri-pilosis; calycibus obliqui-campanulatis, cum dentibus 6~8 mm longis, extus sparse nigri-pilosis; dentibus subularis, c. 1.5 mm longis; corollis flavis; vexillis obovatis 16~17 mm longis, 9~10 mm latis, apice emarginatis, basi sensim angustatis; alis vexillis aequilongis, limbis oblongis, unguibus 10~11 mm longis; carinis c. 16 mm longis, limbis semi-ovatis, unguibus c. 10. mm longis; ovariis piliferis, longi-stipitatis. Legumen ignotum.

Qinghai(青海): Ledu Xian(乐都县), Dala(达拉), alt. 2 800 m., 10 July. 1975. Guo Benzhaoh(郭本兆) 001. (Typus, HNWP).

多年生草本。根粗壮，茎直立，高 50~80 cm，疏被白色柔毛。羽状复叶长 6~10 cm，叶柄长 8~13 mm；托叶离生，线状披针形，长 4~8 mm，宽约 1 mm，外面疏被毛；小叶 11~17 枚，长圆形，长 20~32 mm，宽 6~11 mm，先端钝，基部圆形或宽楔形，具短柄，两面疏被白色柔毛。总状花序生多花，总花梗较叶长，疏被柔毛；苞片线形，长 4~7 mm；小苞片缺。花梗长 2~5 mm，密被黑柔毛；花萼斜钟状，长 6~8 mm，外面疏被黑柔毛，萼齿钻状，长约 1.5 mm，两面密被毛；花冠黄色；旗瓣倒卵形，长 16~17 mm，宽 9~10 mm，先端微凹，基部渐狭；翼瓣等长于旗瓣，瓣片长圆形，瓣柄长 10~11 mm；龙骨瓣长约 16 mm，瓣片半卵形，瓣柄长约 10 mm；子房被柔毛，有长柄。荚果未见。

本变种同原变种的区别在于托叶线状披针形，长仅 4~8 mm，小叶两面疏被白色柔毛；总花梗较叶长，苞片长仅 4~7 mm，花萼长仅 6~8 mm，旗瓣仅 16~17 mm 长，宽达 9~10 mm，翼瓣同旗瓣等长，容易区别。

本变种同黄花黄芪 *A. luteolus* Tsai et Yu 相似，但本变种小叶长圆形，旗瓣长 16~17 mm，宽 9~10 mm，翼瓣和龙骨瓣近等长于旗瓣，瓣柄长均为 10~11 mm，可以区别。



图 3 乐都黄芪 1. 植株上部; 2. 旗瓣; 3. 翼瓣; 4. 龙骨瓣; 5. 雄蕊; 6. 子房; 7. 花萼(王颖绘)

Fig. 1 *Astragalus dabanshanicus* Y. H. Wu 1. up part of the plant; 2. standard; 3. wing; 4. keel; 5. stamen; 6. ovary; 7. calyx (Wang Ying)

白花团垫黄芪 新变型

Astragalus arnoldii Hemsl. et Pears. form. albiflous Y. H. Wu, form. nov.

A typo form. recedit, corollis albis, bractis ovati-lanceolatis c. 1.5 mm longis.

Qinghai(青海): Yushu(玉树), Hoh xil(可可西里), alt. 5 200 m. 15 July 1990. Wu Sugong(武素功) et Huang Rongfu(黄荣福) K-224(Typus, HNWP). 本变型同原变型之区别在于花冠白色, 苞片卵状披针形, 长约 1.5 mm。

大花茵垫黄芪 新变种

Astragalus mattam Tsai et Yu var. *macroflorus* Y. H. Wu, var. nov.

A typo varietatis recedit, corollis majoribus, vexillis c. 16 mm longis, c. 11 mm latis, alis c. 13 mm longis, unguibus c. 5 mm longis, carinis c. 15.5 mm longis, unguibus c. 5~6 mm longis, calycibus c. 9 mm longis, dentibus 5~6 mm longis, bracteis 6~9 mm longis.

Qinghai(青海): Zeku Xian(泽库县), alt. 3600 m., 14 Aug. 1970, Zhou Lihua(周立华) 1791 (Typus, HNWP).

本变种同原变种的区别在于花冠较大。旗瓣长约 16 mm, 宽约 11 mm, 翼瓣长约 13 mm, 柄长约 5 mm, 龙骨瓣长约 15.5 mm, 柄长 5~6 mm, 花萼长约 9 mm, 齿长 5~6 mm, 苞片长 6~9 mm。花期 7~8 月, 果期 8~9 月。

光果多枝黄芪 新变种

Astragalus polycladus Bur. et Franch. var. *glabricarpus* Y. H. Wu, var. nov.

A typo varietatis recedit liguminis glabris, carles subglabris, foliolis super glabris.

Qinghai(青海): Henan Xian(河南县), Damitang(达米塘), alt. 3 600m., 6 Sept. 1990, Wu Yuhu(吴玉虎) 7595 (Typus, HNWP); Tongde Xian(同德县), Hebei(河北), alt. 3 800m., 14 Aug. 1990, Wu Yu-hu(吴玉虎) 6535; Zeku Xian(泽库县), Duofutun(多福屯), alt. 3 400 m. 5 July, 1966, Pi Nanlin(皮南林) 098, 55B; Jiuzhi Xian(久治县), Wasai(哇赛), alt. 3870 m., 1 July, 1971, Guoluo Exp.(果洛队) 233; ibid alt. 3650 m. 4 June, 1971, Tibet Medicin. Plant Exp.(藏药队) 178. 本变种同原变种的区别在于荚果无毛, 茎几无毛, 小叶上面无毛。

多毛马衔山黄花 新变种

Astragalus mahoschanicus Hand. -Mazz. var. *multiplisus* Y. H. Wu, var. nov.

A typo varietatis recedit, foliolis utrinque albi-pilosis adpresse obsitis, vexilli 9~10 mm longi, apice obtusi, stipulis trianguli-lanceolatis



图 4 孟达黄芪 1. 植株上部; 2. 旗瓣; 3. 翼瓣; 4. 龙骨瓣; 5. 雄蕊; 6. 雌蕊; 7. 子房; 8. 花萼 (王颖绘)

Fig. 1 *Astragalus mahoschanicus* Hand.-Mazz. var. *megdaensis* Y. H. Wu 1. up part of the plant; 2. standard; 3. wing; 4. keel; 5. stamen; 6. pistil; 7. ovary; 8. calyx

8 mm longis, bractis 5 mm longis.

Qinghai(青海): Guide Xian(贵德县), Garang(杂让), alt. 3 000 m., 24 July 1989, Liu Shangwu(刘尚武) 3335 (Typus, HNWP).

本变种同原变种的区别在于小叶两面均被白色伏贴柔毛, 旗瓣长 9~10 mm, 先端钝圆, 托叶三角状披针形, 长达 8 mm, 苞片长达 5 mm。

孟达黄花 新变种 图 4

Astragalus mahoschanicus Hand.-Mazz. var. *mengdaensis* Y. H. Wu, var. nov., fig.4.

A typo varietatis recedit, stipulis trianagli-lanceolatis vel lanceolatis. 7~9 mm longis, petiolis 3~20 mm longis, bractis fillfori-lanceolatis 4~5 mm longis, subtus albi-pilosis vel nigrantibus minus mixtis, vexilli subrhombiformi c. 9 mm longi, apice obtusi, alis filiformibus 6~7 mm longis, c. 1 mm latis, apice obtusis.

Qinghai(青海): Xunhua Xian(循化县), Mengda(孟达), alt. 2 200 m., 11 July, 1981, Guo Benzhaoh(郭本兆) 25210(Typus, HNWP).

本变种同原变种的区别在于托叶三角状披针形或披针形, 长 7~9 mm, 叶柄长 3~20 mm, 苞片线状披针形, 长 4~5 mm, 外面被白色或有时混有少量黑色柔毛, 旗瓣近菱形, 长约 9 mm, 先端钝圆, 翼瓣线形, 长约 6~7 mm, 宽仅 1 mm, 先端钝圆, 不裂。

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《云南植物研究》1996~1997 年获奖情况

《云南植物研究》学报在 1996~1997 年荣获中国科学院优秀期刊评比二等奖、第二届云南省优秀科技期刊评比一等奖和第二届全国优秀科技期刊评比三等奖, 在此特向关心和支持我们工作的各级领导、各位编委、审者以及本刊作者和读者表示衷心的感谢。

《云南植物研究》学报编辑部